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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/712,396

11/14/2003

Steven Y. Zhou

8971.0005

6846

22852 7590 11/18/2009  
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EXAMINER

DAFTUAR, SAKET K

ART UNIT

PAPER NUMBER

2451

MAIL DATE

DELIVERY MODE

11/18/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/712,396	<b>Applicant(s)</b> ZHOU, STEVEN Y.	
	<b>Examiner</b> SAKET K. DAFTUAR	<b>Art Unit</b> 2451	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09/11/09.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10-18, 21, 22 and 24-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-18, 21, 22 and 24-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **Continued Examination Under 37 CFR 1.114**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 11<sup>th</sup>, 2009 has been entered. Claims 1-7, 10-18, 21-22, and 24-45 are presented for the further examination. Applicant has cancelled claims 8, 9, and 19 by this amendment.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1-19, 21-22, and 24-45 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

3. Claim objection in previous office action has been withdrawn due to claim amendment.

### ***Claim Rejections - 35 USC § 101***

4. Claims 27-29 are rejected under 35 U.S.C. 101 in previous office action has been withdrawn due to claim amendment.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 -7, 10-18, 21-22, and 24-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bosley et al US Patent Number 7,054,867 (hereinafter Bosley), Zenchelsky et al US Patent Number 6,233,686 B1 (hereinafter Zenchelsky) and further in view of Bommareddy et al US Patent Number 6,880,089 (hereinafter Bommareddy).

As per claim 10, Bosley discloses determining, by the first processing unit (see Figure 1, column 5, lines 11-21), whether the N-tuple address is within an N-tuple space assigned or multi-dimensional space (see figure 2, column 6, line 30- column 7, line 30) to the first processing unit based on a quadrant identifier value [hash value based on number of bit of that represented as hypercube, see figures 2-6, column 6, line 30- column 7, line 50, see column 9, lines 4-24 for the address space corresponds to range of address ] assigned to the first processing unit, wherein the N-tuple space assigned to each of the plurality of processing units is different, and wherein the quadrant identifier is determined using a hash function (see figures 2-6 for quadrant identifier, column 6, line 30- column 7, line 50, see column 9, lines 4-24); determining that the N-tuple address is within the N-tuple space assigned to the first processing unit (Routing, see Figure1 , column 5, lines 3-11, ); determining, when the N-tuple address is not within the N-tuple space assigned to the first processing unit (see figures 2-6, column 6, line 30-

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column 7, line 50, see column 9, lines 4-24 for the address space corresponds to range of address ).

However, Bosley is silent about firewall node for processing a packet based on modified address wherein one of the firewall node is selected from the cluster of firewall nodes within a single network.

Zenchelsky teaches one of the firewall nodes for processing a packet (see Abstract, figure 2, column 2, lines 52-67, column 3, lines 21-40); receiving and reading, the received packet (see Abstract, figure 2-3, column 2, lines 52-67, column 3, lines 21-40); a modified address based on the space assigned to the first processing unit, such that the modified address does not conflict with addresses assigned by any of the other plurality of processing units and sending the packet based on the modified address (see Abstract, figures 5a-5b, column 2, lines 52-67, column 3, lines 21-67, for assigning different IP address from IP pool and/or updating the user IP address each time user access authenticated, see column 8, lines 1-36 and figure 8A -8C for packet transmission based on peer-in / peer- out hash table based on rule identifier).

Bommareddy teaches a firewall cluster within the single network (see figures 1, 4, and 8, column 1, line 66 – column 2, line 60, column 3, line 1 – column 4, line 58, column 6, line 13 – column 8, line 45, column 9, line 5 - column 10, line 67) and processing the set of data packet from first packet from first address to second address wherein the second address being within a range of addresses assigned by firewall cluster ((see figures 1, 4, and 8, column 1, line 66 – column 2, line 60, column 3, line 1 – column 4, line 58, column 6, line 13 – column 8, line 45, column 9, line 5 -

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column 10, line 67, column 11, lines 9-65, column, column 15, line 40 – column 18, line 36)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Bosley, Zenchelsky and Bommareddy to provide a enhanced packet switched data handling method to a high speed network device securely switching data between the high speed network devices communicating behind the firewall clustering system using a enhanced hash function and arithmetic operations whereas the firewall cluster system being configured to operate in manner that creates or configures a firewall cluster on both internal and external network flow controllers to monitor the health of firewalls by probing firewall data packets through both internal and external firewalls whereas the flow controllers distribute traffic based on the source and destination IP addresses of a packet and ensuring that all IP-based protocols are supported and within the range of IP based protocols and repeating the same method steps until all data packets has been processed or securely transmitted to the destination port.

AS per claim 11, Zenchelsky teaches reading as the N-tuple address, a plurality of values from the received packet.(see Abstract, figures 5a-5b, column 2, lines 52-67, column 3,lines 21-67, see column 8, lines 1-36 and figure 8A -8C for packet transmission based on peer-in / peer- out hash table based on rule identifier).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Bosley, Zenchelsky and Bommareddy to provide a enhanced packet switched data handling method to a high

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speed network device securely switching data between the high speed network devices communicating behind the firewall clustering system using a enhanced hash function and arithmetic operations whereas the firewall cluster system being configured to operate in manner that creates or configures a firewall cluster on both internal and external network flow controllers to monitor the health of firewalls by probing firewall data packets through both internal and external firewalls whereas the flow controllers distribute traffic based on the source and destination IP addresses of a packet and ensuring that all IP-based protocols are supported and within the range of IP based protocols and repeating the same method steps until all data packets has been processed or securely transmitted to the destination port.

As per claim 12, Zenchelsky teaches reading at least a source port. (see Abstract, see column 1, lines 27-65).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Bosley, Zenchelsky and Bommareddy to provide a enhanced packet switched data handling method to a high speed network device securely switching data between the high speed network devices communicating behind the firewall clustering system using a enhanced hash function and arithmetic operations whereas the firewall cluster system being configured to operate in manner that creates or configures a firewall cluster on both internal and external network flow controllers to monitor the health of firewalls by probing firewall data packets through both internal and external firewalls whereas the flow controllers distribute traffic based on the source and destination IP addresses of a packet and

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ensuring that all IP-based protocols are supported and within the range of IP based protocols and repeating the same method steps until all data packets has been processed or securely transmitted to the destination port.

13. - 15. (Cancelled).

As per claim 16, Bosley discloses determining the quadrant identifier value based on a hash function and a modulo division [hash value based on number of bit of that represented as hypercube, the person skill in the art would recognize such hash value generation based on hash function and a modulo division, see figures 2-6, column 6, line 30- column 7, line 50, see column 9, lines 4-24 ].

As per claim 17, Bosley discloses adding a value to the N-tuple address, such that the modified N-tuple address is within the N-tuple space assigned to the first processing unit (see column 12, lines 12-41, adding node based on hash).

18. - 20. (Cancelled).

As per claim 21, Bosley discloses using a computer as the first processing unit (see Figure 1, column 5, lines 11-21).

As per claim 22, Bosley discloses routing using a router as the first processing unit (see column 4, line 40- column 5, line 53, routing).

23. (Cancelled).

As per claims 1-7, 27-28, and 30-36, claims 1-7, 27-28, and 30-36 are system claims of method claims 10-18. They do not teach or further define the limitation as



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recited in claims 10-18. Therefore, claims 1-7, 27-28, and 30-36 are rejected under same rationale as discussed in claims 10—18, supra.

As per claims 24-26, claims 24-26 do not teach or further define the limitation as recited in claims 10-18. Therefore, claims 24-26 are rejected under same rationale as discussed in claims 10—18, supra.

As per claims 29 and 37, claims 29 and 37 are firewall cluster claims of method claims 10-18. They do not teach or further define the limitation as recited in claims 10-18. Therefore, claims 29 and 37 are rejected under same rationale as discussed in claims 10—18, supra.

As per claims 38-45, claims 38-45 are computer readable storage medium claims of method claims 10-18. They do not teach or further define the limitation as recited in claims 10-18. Therefore, claims 38-45 are rejected under same rationale as discussed in claims 10—18, supra.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See accompanying PTO 892 form.

- a. System and method for detecting and countering a network attack by Etheridge et al. US Publication Number 2004/0054925 A1.
- b. Hash-based systems and methods for detecting, preventing, and tracing network worms and viruses by Milliken US Publication Number 2003/0115485 A1.

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- c. Dynamic packet filter utilizing session tracking by Goldberg et al. US Publication Number 2004/0013112 A1.
  - d. IP datagram over multiple queue pairs by Graham et al. US Patent Number 7,133,405 B2.
  - e. Handling packet fragments in a distributed network service environment by Albert et al. US Patent Number 6,742,045 B1.
8. A shortened statutory period for reply to this non-final action is set to expire **THREE MONTHS** from the mailing date of this action. Failure to respond within the period for response will result in **ABANDONMENT** of the applicant (See 35 U.S.C 133, M.P.E.P 710.02,71002 (b)).

#### **Contact Information**

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saket K. Daftuar whose telephone number is 571-272-8363. The examiner can normally be reached on 8:30am-5:00pm M-W.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Saket K Daftuar/

Examiner, Art Unit 2451

/John Follansbee/

Supervisory Patent Examiner, Art Unit 2451